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## MICROSOFT'S REAL SINS

The courts have determined that Microsoft has used its economic clout and technological hegemony to maintain and extend its market dominance unfairly. But this insult to the body corporate and intrusion into the body politic does not compare in severity to the injury Microsoft has done to our bodies, minds, and wallets as individual and corporate users of its products.

The problem I speak of is not one of market dominance, but of an inhumane disregard for our physical frailties and mental limitations.

The human-machine interface of Microsoft products is badly designed, as if interface designers did not know how to do better. The effects of this willful ignorance are manifold. One, for example, is to force us to make many more keystrokes and mouse motions than is necessary for a task. This excess can be total-- as when there is no action you may take but must either use the mouse to point to and click on a certain on-screen button or tap the Return key before you are allowed to proceed. I estimate that overall, compared to good interface design practice, over 25% of the keyclicks and 50% of the mouse moves are unnecessary. Where is the reckoning for the human pain and loss of productivity from repetitive stress injuries? Who will dun the Redmond Monolith for the large negative impact on productivity that the wasted motions themselves have caused?

More subtle is the unnecessary taxation Microsoft software interfaces impose in terms of frustration and annoyance. Due to designs that ignore what is presently known about human cognition-- the software often causes us to make errors, errors that would not have occurred had decent cognitive engineering been applied. In another time, riled revolutionaries might have tossed the software into Boston harbor (nowadays they'd be fined for polluting the harbor).

When I give talks on usability, I never find one computer user who is not fed up with the petty impediments we face. I ask, "Who here has accidentally struck some key combination when using Microsoft Word and then spent minutes figuring how to turn off the undesired feature that resulted?" Almost every person raises a hand. I can bring down the house by saying, "It looks like you're writing a letter. You are an idiot. You need help?" It is not that the problems of Microsoft's works are unrecognized, it is that they seem to be accepted as an inevitable part of using computers. Apple's Macintosh interface, our only almost-big-time alternative, suffers from the similar interface problems: it is only a little better. Besides, most of us are forced to use Microsoft products on it anyway. Outside of Gates's Domain, we note that the Internet and the World Wide Web could be made far easier to understand and use.

Most of the people who design the systems and the software, those who we think of as leaders and

visionaries, are woefully behind the times when it comes to interfaces. They have not progressed much beyond where we were 20 years ago.

To compound these sins, Microsoft's products demand far more computer resources than necessary. For example, in one editor I use, a 22-word memo, with 118 characters, is stored in 456 bytes of memory. In Word, it takes up 19,742 bytes. A business plan that requires 98,482 bytes in the first editor is bloated into 225,280 bytes by Word. Depending on the average size of your documents, Word wastes from half to over 90 percent of your memory. That's memory you or your company pays for. Now add in the hundreds of megabytes of memory and gigabytes of hard drive space their latest operating system demands. With competent design, it could run a lot faster and fit in a lot less memory than it now does. Besides stealing resources, large programs are harder to learn and understand, and are more prone to bugs than are smaller programs. They eat into your time and pocketbook relentlessly. Nobody is taking Microsoft to court over these brazen acts of theft.

Some defend Microsoft on the grounds that it has brought a measure of uniformity and standardization to the industry. They point out that because of Microsoft, skills are transferable from one machine to another. Even if true, and it is possible to argue that standards arise in ways other than by domination, that is no excuse for the awful quality of the products. Others believe that there is no other possible approach than Microsoft's, but this opinion comes purely from parochialism.

Microsoft (and, to a lesser extent -- only because they sell fewer units -- other software makers) is injuring us physically by making us do unnecessary labor; waste our time and that of our enterprises; cause us avoidable mental stress, anxiety, frustration, and annoyance; and force us to buy more far more hardware than is necessary to do the job. Even if the department of Justice had applied the severest remedies open to it, these crimes would not have been touched.

Computer and software designs are not like the weather. We can do something about them. The technology is available. If the courts cannot, it is time that users, management, and shareholders demand better.

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